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ABSTRACT

This publication, the second in a series of seven for elementary schools, is an environmental education curriculum guide with a focus on waste management issues. It presents a unit of exercises selected for first grade students to introduce the ideas that both natural and man-made objects have uses in the world, and the objects which are not useful are classified as waste objects. Litter is cited as one problem that very young children can comprehend and solve. They can learn to dispose of waste properly, help recycle some items, and come to understand how their own behavior affects the environment. The activities included in this unit nurture a first step in building a sense of environmental awareness and responsibility. The unit discusses the following major ideas: (1) natural and man-made objects exist and have uses in the world; (2) objects in our environment can be classified into useful and waste objects; (3) litter is man-made or man-used solid waste that is in the wrong place; (4) people are responsible for disposing of waste properly; (5) some objects last a long time and others change or disappear quickly; and (6) some waste objects can be reused or recycled. Each activity in the unit meets the Virginia Department of Education Standards of Learning Objectives for Science; however, the material is designed to be interdisciplinary and may also be used to meet social studies, health, language arts, mathematics, or art requirements. A list of additional resources (articles, magazines, educational curricula) is included. (MCO)

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OPERATION WASTE WATCH:

THE NEW THREE RS FOR ELEMENTARY SCHOOL

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GRADE ONE

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SE 052 790

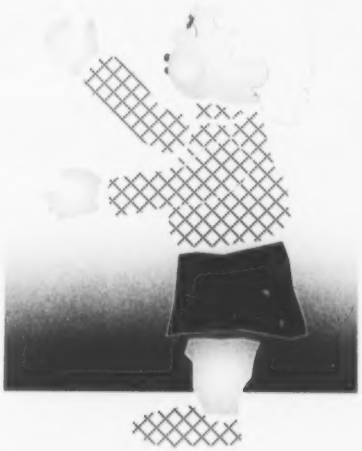
OPERATION WASTE WATCH:
THE NEW THREE RS FOR ELEMENTARY SCHOOL
GRADE ONE

Foreword

Ten years ago the Division of Litter Control developed a curriculum for elementary schools called **Operation Waste Watch**, an environmental education curriculum with a focus on waste management issues. The seven grade level, multi-media units have been widely used in classrooms across the state and have been considered a national model for environmental education. Each unit came with a number of peripheral teaching aids, including film strips, classroom posters, and coloring or comic books, which emphasized the theme of the unit and were designed to be taken home by the students, thereby extending and strengthening the original messages of litter control and recycling.

The instructional core of the unit was in the activity cards which presented several lessons for class or individual participation. Each teacher could select among the activities incorporating only that material which he or she wished to use. **Operation Waste Watch** materials were designed to be interdisciplinary and may be used to meet science, social studies, health, language arts, mathematic, or art requirements. Activities in the First Grade level of Operation Waste Watch correlate with several of the science objectives as well as social studies, health, language arts, and art objectives.

This new edition of our curriculum comes in a markedly different package: a teacher's workbook, rather than the slip case filled with materials. Our annual surveys showed that the film strips, while desired, were rarely used. The cards were hard to keep track of. The original format was never designed for refills, continual orders, or maintaining over a period of time. Many unit components got lost or strayed. As teachers moved to other schools, **OWW** got moved in bits or pieces. After ten years, it was time to update the bibliography and modify some of the activities to take into account the current state of the world of solid waste. All these conditions translate into a simpler format which will be easier to order and use. We hope you will enjoy this second edition of **Operation Waste Watch: The New Three Rs For Elementary Schools.**



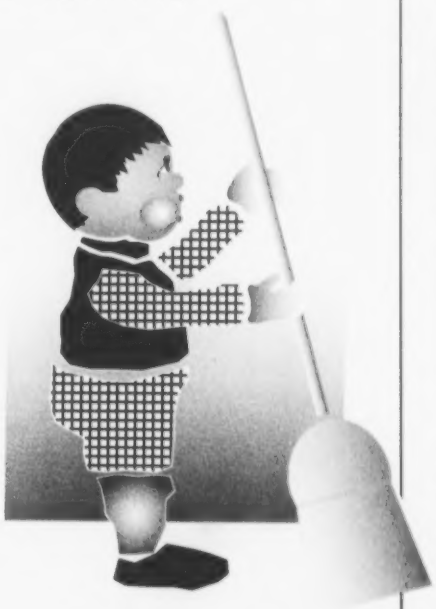
THE NEW THREE RS FOR ELEMENTARY SCHOOL

The theme of the first grade unit is **Waste Out of Place.** Students classify objects as either waste or useful objects, learn to identify litter and to dispose of their own waste items properly. Major ideas of the unit include:

- Natural and man-made objects exist and have uses in our world.
- Objects in our environment can be classified into useful and waste objects.
- Litter is man-made or man-used solid waste which is in the wrong place.
- People are responsible for disposing of waste properly.
- Some objects last a long time and others change or disappear quickly.
- Some waste objects can be reused or recycled.

At the completion of this unit, students will be able to classify a set of objects into useful and waste groups. They will identify objects which are litter. Students will recognize that people cause litter. They will also recognize that littering is improper behavior and that waste objects belong in a waste receptacle or litter bag. Finally, students will be able to predict whether or not an object will change shape or form.

Litter is a very accessible pollutant and one even young children can comprehend. Children may be able to do very little to solve other environmental problems, but they can learn to dispose of waste properly, help recycle household and classroom items, and come to understand how their own behavior affects the environment. A waste management unit is an excellent place to begin creating environmental awareness. From this step, young people can develop a strong sense of environmental responsibility.



The activities selected for the first grade students introduce the ideas that both natural and man-made objects have uses in our world, and that the objects which are not useful are classified as waste objects. The unit emphasizes the development of scientific observation and classification skills essential to the ultimate goal of preparing young citizens to make rational decisions about personal and community solid waste disposal.

The program will meet the following Standards of Learning Objects for **Science** as presented by the Virginia Department of Education:

1.1

The student will share responsibility and tasks and use materials in a safe manner. Inherent throughout unit activities. " Treats" "Useful and Waste Objects"

1.2

The student will classify objects according to opposite properties. "Classifying Waste" "Useful and Waste Objects"

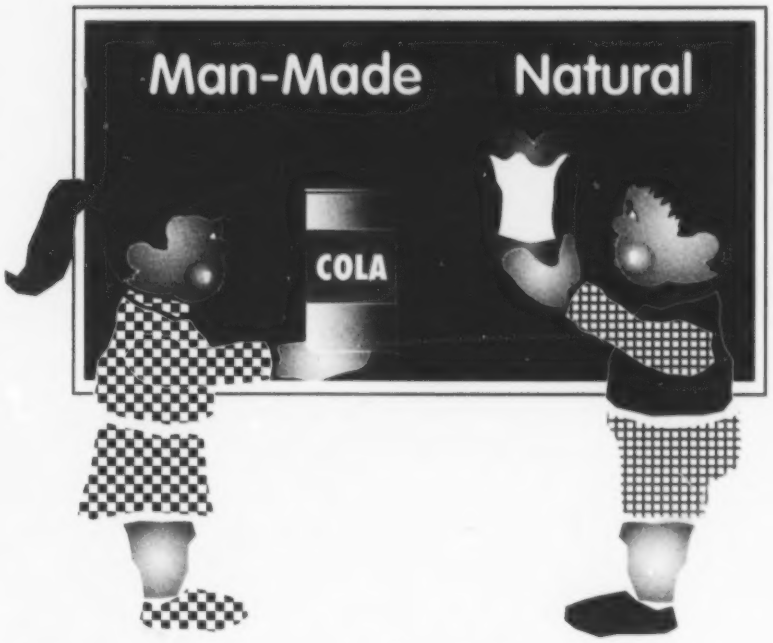
1.14
The student will identify commonly used natural resources, describe the way they are used, and tell what can be done to conserve them. "Classifying Waste" "Recycling"

1.15
The student will identify some major sources of air, land, and water pollution. "Litter"

Several objectives of different content areas correlate with the activities in ***Operation Waste Watch.***

Social Studies
1.4
Students will identify the need for rules in home and school.

Health
1.1
The student will recognize that proper health practices help prevent illness and disease.



1.12
The student will develop safe habits to be used in the home.

Language Arts
1.13
The student will derive logical solutions to simple problems.

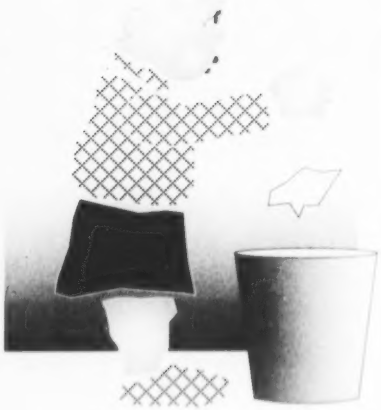
1.15
The student will use oral and written language creatively.

Art
1.11
The student will distinguish between natural and man-made objects.

1.14
The student will create original works of art which correlate with spoken and/or written language.

UNIT OBJECTIVES

Unit Objectives for Waste Out Of Place are:



Students will be able to classify a set of objects into useful and waste subgroups.

Students will be able to identify objects which are litter.

Students will be able to recognize that people cause litter.

Students will understand that littering is improper behavior.

Students will recognize that waste objects belong in a waste receptacle or litter bag.

Students will be able to predict correctly whether an object will change shape or form.

Classroom sets of coloring books entitled "Who Causes Litter?" may be ordered from the Department of Waste Management by classroom teachers. Please allow three weeks for delivery. Contact:

Materials Technician
Department of Waste Management
Eleventh Floor, James Monroe Building
Richmond, VA 23219

804/786-8679

LEVEL: First Grade
1991 Commonwealth of Virginia
Printed on Recycled Paper

WASTE OUT OF PLACE

Useful and Waste Objects

(SOL Science 1.1, 1.2; Language Arts 1.13, Art 1.11, 1.14)

Ask the children to look around the classroom and pick out five useful and five waste objects. Make lists of the objects on the chalkboard or draw small pictures of the objects. Write the word **useful** on the board above the list of those objects. Elicit from the children a definition of useful. Write the word **waste** above the list of waste objects. Ask the children to put the waste in the proper place.

Ask several children to use various different objects in the classroom while the rest of the class observes them.

Ask one child to identify a waste object in the classroom.

Additional Activities: Have the children draw pictures of useful objects which they find in the room. They could also come up with a list of useful objects they can think of at home. Using old magazines, each student could cut out pictures of **useful** or **waste** objects and create poster montages of the assortment of pictures the class has cut out. Another idea using magazine pictures is having several pictures of useful objects mounted individually and several pictures of waste objects. Children can mix and match and have friends sort the pictures into waste and useful categories.

Treats

(SOL Science 1.1; Social Studies 1.4; Health 1.1)

As a review, give each child in the class crackers, fruit, or vegetable sticks wrapped in foil or plastic. Ask the class to tell you whether or not the wrapper is useful and why or why not.

Have the children unwrap their treats and eat them. Afterwards, ask them to tell you whether or not the wrapper is still **useful** or whether it has become **waste.**

Have one side of the classroom drop their wrappers on the floor. Discuss what this action is called. Elicit the response "littering."

Now have each child in the class put his or her wrapper in the correct receptacle so no one will be littering.

Litter

(SOL Science 1.14, 1.15; Health 1.12; Language Arts 1.15; Art 1.14)

Ask the class to find examples of waste in the classroom which are also **litter.** Ask for a definition of litter. Ask the children what people should do with litter. Ask the children to put all the litter in the trash can.

Have the children follow up on this exercise at home tonight. Tell them to look for litter in their bedrooms at home. Do they think they will find any?

Ask the children to put all the litter they find in their bedrooms in a wastebasket or a large plastic bag so they can throw it all away.

Additional activities:
Using the picture box, have a number of pictures of things which can become litter. Have children sort through these and identify those objects. Use pictures of cans, bags, cartons, bottles.

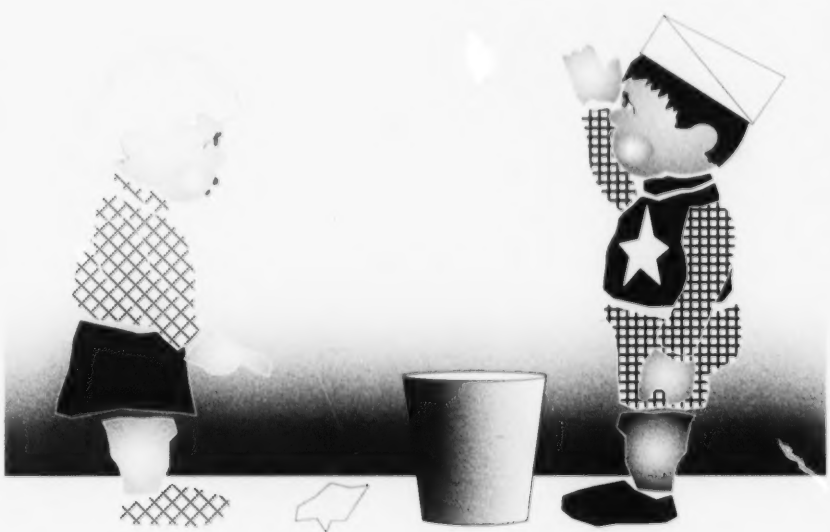
Arrange for pick up time at different points during the school day. Have the children pick up any litter in the classroom which they find, and dispose of it properly. Another extension is to have children note and pick up litter in the hallways, or on the playground. Remind the children that litter is waste people put in the wrong place.

Designing a litterbug is a good art project. Either youngsters can come up with individual portraits of their personal versions of litterbugs, or the entire class can assemble the Class Litterbug. Using materials that would otherwise be discarded would be a very nice touch.

Design a Litter Badge

(SOL Art 1.14)

Have each of the students make an anti-littering badge or button. They can incorporate a picture of their favorite litter bug or present an anti-littering message in any way. They could wear their badges whenever they do clean up patrols.



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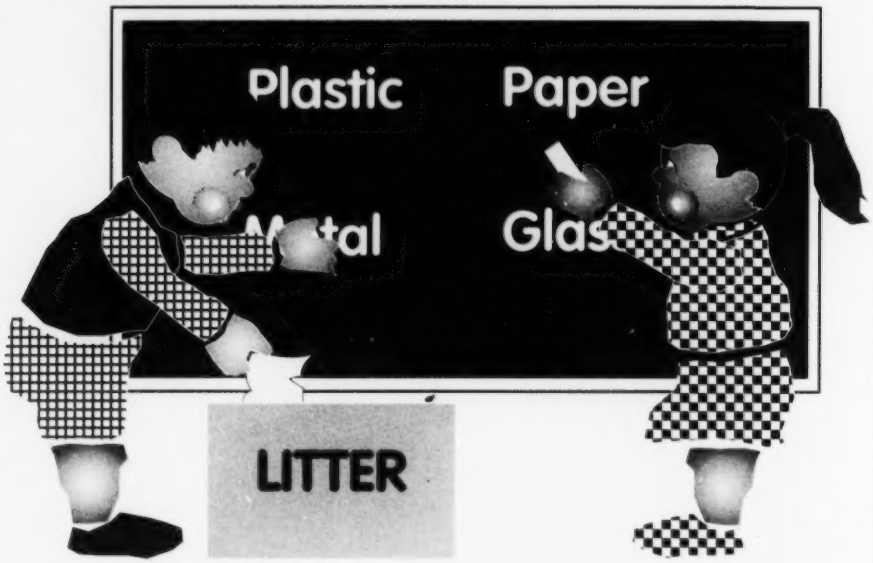
WASTE OUT OF PLACE



Classifying Waste

(SOL Science 1.2, 1.14; Language Arts 1.13, 1.15; Art 1.14)

For the next several days, save all the clean waste from your classroom in a large container. After a few days, ask the class to separate the different kinds of objects into the following groups: paper.....plastic.....glass.....metal.

Does the class find any other categories? Ask the students, "Are some of these objects **useful** objects rather than **waste** objects?" Some objects can be reused or recycled by your class.

Ask the students "What type of waste do we have the most of? Is it *man-made* or *natural* waste?

Ask each child to pick out one of the **waste** objects and tell how he or she could make something new from it or do something new with it.

Help the students **reuse** some of the waste items to make new things. Ask the class to bring in one waste object from home to reuse it in some way. Discuss that **reuse** is when we take an object that would otherwise be thrown away and change it in some way so that it is again **useful**.

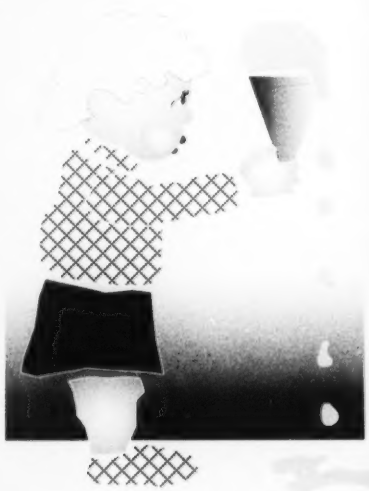
Explain to the class that some waste objects that they cannot seem to find a use for can still be used again. Paper, glass, aluminum and many plastic objects can be made into new things in special factories. This is called **recycling**.

Changes

(SOL Science 1.12, 1.14; Language Arts 1.13)

Accumulate pictures of objects that do not change or that change very slowly, for example, a rock, a shell, a plastic bag, a small metal car, a plastic doll, a plate or other dish. Also have pictures of objects that change rapidly, such as a cloud, ice, a flower, an ice cream bar. Have the children identify which will change slowly, or not at all, and which will change quickly.

Ask the children, if someone tosses a plastic bottle or an aluminum can on the roadside, will this litter stay on the ground for a long time, or will it change quickly and disappear?



Recycling

(SOL Science 1.14; Social Studies 1.4; Health 1.12; Art 1.14)

Contact your local recycling program for information on how to set up a recycling program in your school. If you cannot get assistance locally, get in touch with the Department of Waste Management Division of Litter Control and Recycling. Many school divisions are developing and implementing school recycling programs.

Most schools begin by recycling waste classroom paper. Make certain that each receptacle is clearly labelled as **trash** and **recycle here**. Students could decorate their recycling receptacles so that they would be clearly different from trash receptacles.

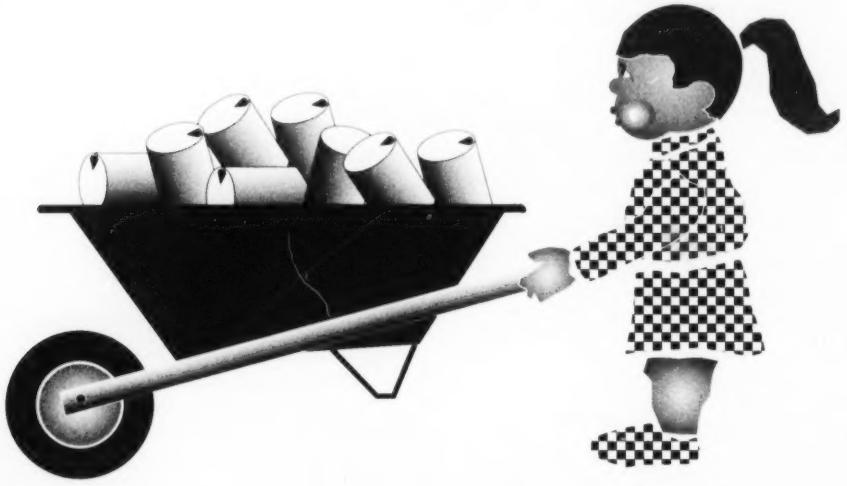
Students may also be interested in helping to recycle in their homes, or they may want to have a recycling drive and bring materials, for example, aluminum beverage cans, from home. Such recycling drives are better when done school wide. Be sure that you have a recycler who will buy the materials you have accumulated.

It would be good to have a representative from your locality come to speak to the class about the recycling programs available in your area. Children are excellent promoters of recycling programs in the home.

Experiment - Find Out What Changes

(SOL Science 1.2, 1.14, Language Arts 1.13; Art 1.11)

Get an ice cube, an apple or apple core, a rock, a glass bottle, a plastic toy, a piece of paper a piece of bread, and a drink can. Place these items in an open box or a tray. Which objects are man-made and which are natural? Check them at the end of the day. Have any of the objects changed? Record the changes shown by the items. Which man-made objects changed? Which natural objects changed? Put the tray or box outside the window of the classroom. Keep it outside for several weeks. Check the box every few days, and record all the changes.



ADDITIONAL RESOURCES

Articles:

Rathje, William; "Once and Future Landfills;" *National Geographic*, May 1991; published by the National Geographic Society, Washington, DC.

Rathje, William; "The Garbage Crisis;" *Atlantic Monthly*; December 1989.

"Reading, Writing, and Recycling, A Catalog of Education Materials;" *resource RECYCLING*, December 1990, published by Resource Recycling, Portland OR 97209.

"Recycling Makes the Grade in Schools," *Reusable News*, Spring, 1990; United States Environmental Protection Agency; RCRA Information Center, 401 M Street S. W., Washington DC 20460.

"The Trashing of Virginia;" series of articles printed in the Richmond *Times Dispatch;* August 26-29, 1990; Richmond Newspapers, Inc.; Richmond VA 23261.

Magazines:

Garbage: The Practical Journal for the Environment; published bi-monthly by Old House Journal Corp.; 435 Ninth Street, Brooklyn NY 11215.

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resource RECYCLING: North American's Recycling Journal; published monthly by Resource Recycling, Inc.; 1206 N.W. 21st Avenue, Portland OR 97209.

Waste Age; published monthly by the National Solid Waste Management Association; Suite 1000, 1730 Rhode Island Avenue, N.W., Washington DC 20036.

Educational Curricula:

A Curriculum Activities Guide to Solid Waste and Environmental Studies (K-12); Institute for Environmental Education; 3200 Chagrin Boulevard, Cleveland OH 44124.

Garbage In America; Refuse Industry Productions, Inc.; P. O. Box 1011, Grass Valley CA 95945.

Garbage Reincarnation: Curriculum Guide (4-6); Garbage Reincarnation, Inc.; Post Office Box 1375, Santa Rosa CA 95402.

Let's Recycle (K-6, 7-12); The United States Environmental Protection Agency; Public Information Center, 401 M Street, S.W., Washington DC 20460.

Mobius Curriculum: Understanding the Waste Cycle (4-6); Browning Ferris Industries, Inc.; 8607 Roberts Drive, Suite 100, Atlanta GA 30350.

New Three Rs: Reduce, Reuse, and Recycle (6-12); Virginia Department of Waste Management; Eleventh Floor, James Monroe Building, Richmond VA 23219.

People and Their Environment (1-3, 4-6); A conservation project of the National Council of State Garden Clubs, ©Brentree Environmental Center; Brentree Farms, Inc., Milford PA; published by Bayberry Press; Port Washington NY.

Project WILD (K-6); contact Virginia State Coordinator Suzie Gilley, Wildlife Education Specialist; Department of Game and Inland Fisheries; P. O. Box 11104, Richmond VA 23230-1104.

Save It! Easy Environmental Tips to Save the Earth; developed by Corporation for Public Broadcasting; published by Custom Print, Inc.; 2611 Shirlington Road, Arlington VA 22206.

Think Earth Environmental Education Program (K-3, 4-6 available 1992); Educational Development Specialists; Think Earth Customer Service, 5505 East Carson Street, Suite 200, Lakewood CA 90713.

Waste: A Hidden Resource (7-12); Keep America Beautiful, Inc.; 9 West Broad Street, Stamford CT 06902.

Waste In Place (K-7): Keep America Beautiful, Inc.; 9 West Broad Street, Stamford CT 06902.

Other Information:

The Fourth R: An Implementation Guide for School Recycling and Solid Waste Management; produced by Association of Vermont Recyclers; P. O. Box 1244, Montpelier VT 05601.

How to Set up a School Recycling Program; produced by the Council for Solid Waste Solutions; 1275 K Street N. W., Suite 400, Washington DC 20005.

Setting Up a Solid Waste Recycling Program in Schools; ©J. Winston Porter; produced by McDonald's Corporation; One McDonald's Plaza, Oak Brook IL 60521.

NOTES:

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101 North 14th Street
Richmond, Virginia 23219

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